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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Serge J. Hodgson
Gunnison, McKay & Hodgson, L.L.P.
1900 Garden Road, Suite 220
Monterey, CA 93940

EXAMINER

CHAVIS, JOHN Q

ART UNIT

PAPER NUMBER

2193

DATE MAILED: 10/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/037,901

Applicant(s)

PARK, SEONGBAE

Examiner

John Chavis

Art Unit

2193

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11, 14 and 17-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11, 14 and 17-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

PD

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-5, 10-11, 14, 17-18, 21, and 27-29 are rejected under 35 U.S.C. 102(b) as being anticipated by Goebel (5,901,317).

CLAIMS:

1. A method comprising: adding direction to interference edges of a register interference graph

Goebel

See the abstract and col. 3 lines 21-27, which adds vectors (direction) to interference edges...

The applicant argues that Goebel Does not teach or suggest adding Direction to either the primary or secondary edges; however, a Microsoft Press Computer Dictionary definition of the terms **vector**, **graph**, **edge**, **tree** and **line** is hereby provided to indicate the standard use of the term in the art. Definition 2 indicates that a vector is directional (a line drawn in a **certain direction** from a starting point to an ending point). The definition of a graph indicates that a graph can be optionally **directed or not (bi-directional)**; while, an

edge connects nodes in a tree or graph. Note that connections between nodes in a tree can be bi-directional and connected via lines (bi-directional), see for example the tree network listed on the same page as the definition of tree, page 477. Therefore, contrary to the applicants suggestion that Goebel does not teach or suggest adding direction, the terms vector, edges and graph, as well as their inherent references to other terms such as tree and line, is considered sufficient to indicate the claimed feature of adding direction to edges.

Wherein each interference edge extends between two nodes of said register interference graph, said adding direction comprising:

see again the definition of edge, graph and nodes, attached.

for each node...

see col. 2 lines 25-48.

wherein upon determination...

" " "

defining an interference graph...

see col. 3 lines 28-40.

defining a pass degree...

see col. 1 lines 22-30 and col. 1 line 65-
col. 2 line 64.

choosing a node of said register interference graph to spill based upon a pass degree of said node.

Goebel chooses a node...to spill based upon a pass degree of said node Col. 3 lines 28-40; in which the pass degree is considered specified via the applicants specifications, sects. 0021-0025.

2. The method of claim 1 further comprising building said register interference graph.

See col. 3 lines 20-27.

3. The method of claim 1 wherein said register interference graph comprises: a first node;

See col. 3 lines 47-54.

a second node; and

" " " "

an interference edge between said first node and said second node,

See col. 3 lines 55-67 and col. 4 lines 13-22.

said first node being a primary node.

" " " " " , the primary edges are considered to represent the primary node.

4. The method of claim 3 wherein said second node is a secondary node.

The secondary edges in col. 4 lines 13-22 are considered to represent the secondary edges.

5. The method of claim 4 wherein said interference edge consists of a uni-directional interference edge.

See the vectors in the rejection of claim 1.

10. The method of claim 3 wherein a first variable associated with said first node is live when a second variable associated with said second node is defined or used.

This feature is also considered taught via Goebel as specified in the applicants admitted prior art, sect. 0019 and Goebels col. 2 line 66-col. 3 line 19.

In reference to claims 11, 14, 17, see the rejections of claims 6 in view of claim 10. Also, see fig. 4.

As per claim 18, see the rejection of claim 2.

The features of claim 21 are taught via claim 5 above.

In reference to claim 27-29, see the rejections of claims 1-2.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 6-9, 19-20, 22-26 are rejected under 35 U.S.C. 103(a) as being obvious over Goebel in view of the applicants choice of optional locations or placement of items not considered pertinent to the invention.

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). For applications filed on or after November 29, 1999, this rejection might also be overcome by showing that the subject matter of the reference and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person. See MPEP § 706.02(I)(1) and § 706.02(I)(2).

6. The method of claim 4 wherein an end of said interference edge adjacent said first node comprises a pass edge and wherein an end of said interference

The choice of which edge is adjacent to another is not considered a part of the invention; but, merely a result of coincidence or chance. Therefore,

edge adjacent said second node
comprises a non-pass edge.

Goebel is considered to provide for the
Feature, see fig. 1.

7. The method of claim 3 wherein said
second node is a primary node.

This feature is also considered a result
Of chance that is provided by Goebel.

8. The method of claim 7 wherein said
interference edge consists of a bi-
directional interference edge.

This feature is not considered to be
taught by Goebel; however, no specific
Use is specified for the bi-directional
interference edge. Therefore, the
feature is considered to provide the
same functionality as the uni-directional
edge (vector), above.

9. The method of claim 7 wherein an
end of said interference edge adjacent
said first node comprises a pass edge

See the rejections of claims 6 and 7
above.

and wherein an end of said interference
edge adjacent said second node
comprises a pass edge.

The features of claims 19-20, 23 are taught via the cited portions of claim 7.

In reference to claim 22, see the rejection of claim 6.

As per claims 24 and 25, see claims 8-9.

The features of claim 26 are taught via claim 10.

Conclusion

5. Applicant's arguments filed September 02, 2005 have been fully considered but they are not persuasive. The applicants arguments in view of adding direction is recognized in claims 1, 17 and 27; however, the feature appears to be non existent in claims 11 and 14.

6. The newly cited reference to Aizikowitz et al. (5,761,514) is considered pertinent to the applicants disclosure.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Chavis whose telephone number is (703) 571-3720. The examiner can normally be reached on M-Tue & Th-F, 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kakali Chaki can be reached on (703) 571-3719. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JC
September 29, 2005



JOHN CHAVIS
PATENT EXAMINER
ART UNIT 2193